



Maintenance and Service Guide

SUMMARY

This guide provides information about spare parts, removal and replacement of parts, security, backing up, and more.

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Product notice

This guide describes features that are common to most models. Some features may not be available on your computer.

To access the latest user guides, go to <http://www.hp.com/support>, and follow the instructions to find your product. Then select **User Guides**.

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Safety warning notice

Reduce the possibility of heat-related injuries or of overheating the computer by following the practices described.

 **WARNING!** To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to come into contact with the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by applicable safety standards.

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1 Product description

This table provides detailed product information.

Table 1-1 Product components and their descriptions

Category	Description
Product Name	HP Chromebook® 11a
	Model number: 11a-na0xxx
	CTO model number: 11a-na000
Processor	Mediatek MT8183 (2.0 GHz, 2 MB cache, 8 cores)
Graphics	UMA integrated graphics
Display	29.5 cm (11.6 in), HD (1366 × 768), antiglare, WLED, slim, 220 nits
	SVA 45% CG, eDP, nontouch
	UWVA, eDP 1.2 without PSR, Touch-on Panel (TOP)
Memory	4 GB of on-board LPDDR4 3733 and 4266 memory, nonupgradeable
Primary storage	On-board embedded MultiMedia Controller (eMMC v5.0) configurations
	64 GB
	32 GB
Audio and video	HP Webcam - True Vision HD camera: indicator LED, USB 2.0, f2.0
	Dual speakers
	B&O Audio
	720p by 30 frames per second
	Dual microphone with appropriate software: echo cancellation, noise suppression
Wireless	Integrated Wireless option with dual antennas (M.2/PCIe)
	Qualcomm - 802.11 AC 2 × 2 Wi-Fi + Bluetooth® 5 Combo Adapter (non-vPro, MU-MIMO supported)
Media card reader	HP Multi-Format Digital Media Card Reader
	Supports microSD™
	Push-push insertion/removal
Ports	Audio-out (headphone)/audio-in (microphone) combo jack (right side)
	USB 2.0 Type C (right side; supports power delivery, data transfer, DisplayPort 1.1 up to 1440 × 900 @ 60 Hz out through adapter)
	USB 2.0 Type A (left side)
Keyboard/pointing devices	Google Keyboard
	Island style, textured, standard notebook keyboard
	Clickpad with image sensor

Table 1-1 Product components and their descriptions (continued)

Category	Description
	Multitouch gestures enabled
	Taps enabled as default
Power requirements	Battery
	2 cell, 37 Whr, long life
	AC adapter
	45 W, USB Type-C straight type, nPFC
	Power cord
	C5, 1 m
Security	H1 Secure Microcontroller
Operating system	Google® Chrome™ 64
Serviceability	End user replaceable part
	AC adapter

2 Components

Your computer features top-rated components. This chapter provides details about your components, where they are located, and how they work.

Right

Use the illustration and table to identify the components on the right side of the computer.



Table 2-1 Right-side components and their descriptions

Component			Description
(1)		Memory card reader	Reads optional memory cards that store, manage, share, or access information. To insert a card: 1. Hold the card label-side up, with the connectors facing the computer. 2. Insert the card into the memory card reader, and then press in on the card until it is firmly seated. To remove a card: ▲ Press in on the card, and then remove it from the memory card reader.
(2)		AC adapter and battery light	• White: The AC adapter is connected and the battery is fully charged. • Amber: The AC adapter is connected and the battery is charging. • Blinking amber: The battery has an error. • Off: The battery is not charging.
(3)		USB Type-C® power connector and port	Connects an AC adapter that has a USB Type-C connector, supplying power to the computer and, if needed, charging the computer battery. – and –

Table 2-1 Right-side components and their descriptions (continued)

Component		Description
		Connects a USB device, provides data transfer, and (for select products) charges small devices when the computer is on or in Sleep mode.
		– and –
		Connects a display device that has a USB Type-C connector, providing DisplayPort™ output.
		NOTE: Cables, adapters, or both (purchased separately) might be required.
(4)	 Audio-out (headphone)/Audio-in (microphone) combo jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. Also connects an optional headset microphone. This jack does not support optional standalone microphones. WARNING! To reduce the risk of personal injury, adjust the volume before putting on headphones, earbuds, or a headset. For additional safety information, see the <i>Regulatory, Safety, and Environmental Notices</i> . NOTE: When a device is connected to the jack, the computer speakers are disabled.

Left

Use the illustration and table to identify the component on the left side of the computer.

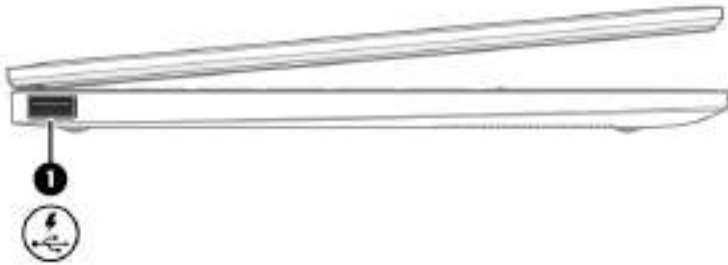


Table 2-2 Left-side component and description

Component		Description
(1)	 USB port	Connects a USB device, provides data transfer, and (for select products) charges small devices when the computer is on or in Sleep mode.

Display

Use the illustration and table to identify the components on the display.

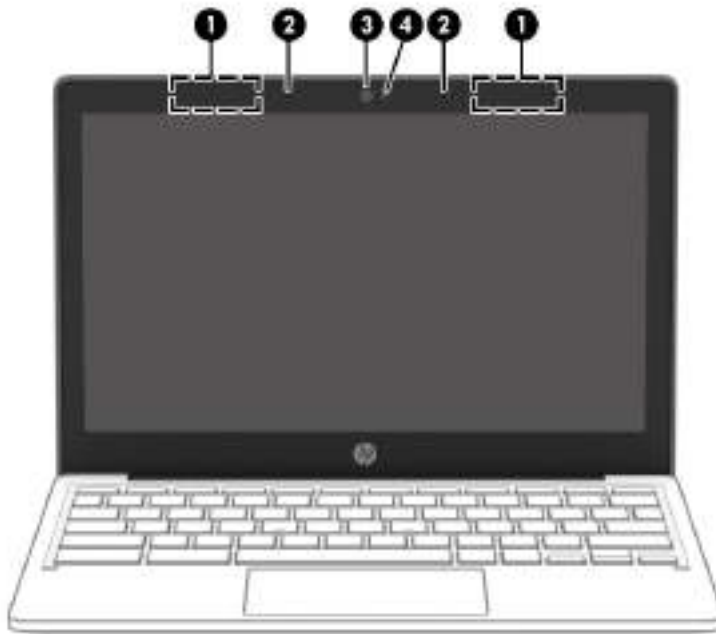


Table 2-3 Display components and their descriptions

Component		Description
(1)	WLAN antennas*	Send and receive wireless signals to communicate with wireless local area networks (WLANs).
(2)	Internal microphones	Record sound.
(3)	Camera	Allows you to video chat, record video, and record still images. NOTE: Camera functions vary depending on the camera hardware and software installed on your product.
(4)	Camera light	On: The camera is in use. Off: The camera is turned off by the software.

*The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

For wireless regulatory notices, see the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region.

Keyboard area

Keyboards can vary by language.

Touchpad

Use the illustration and table to identify the touchpad components.

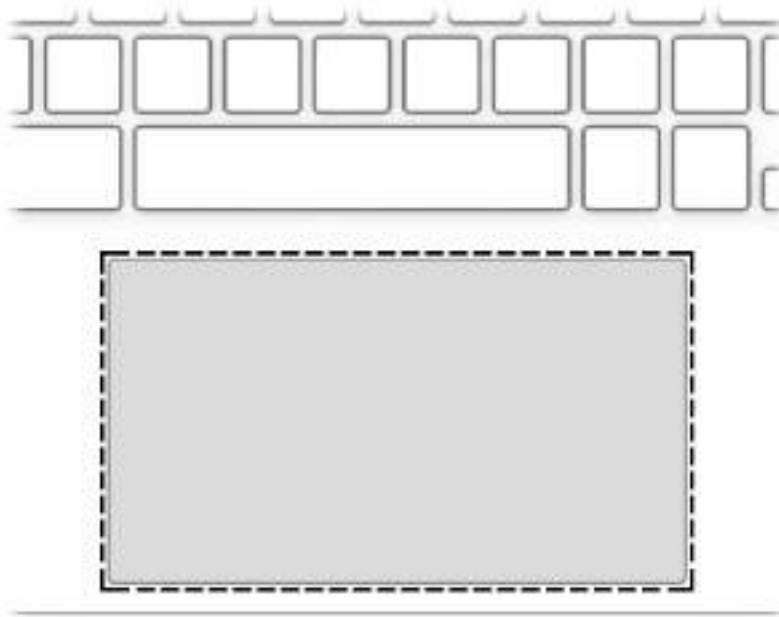


Table 2-4 Touchpad component and description

Component	Description
Touchpad zone	Reads your finger gestures to move the pointer or activate items on the screen.

Special keys

Use the illustration and table to locate the special keys.

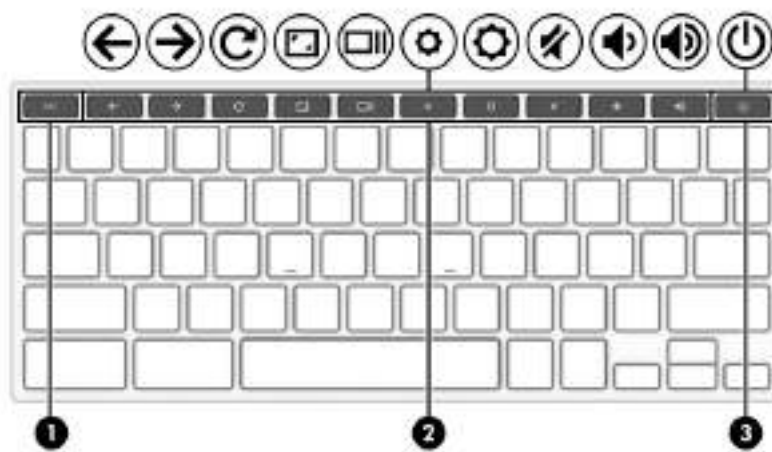


Table 2-5 Special keys and their descriptions

Component		Description
(1)	esc key	Activates certain computer functions when pressed in combination with other keys, such as tab or shift .
(2)	Action keys	Execute frequently used system functions.
(3)	 Power button	- When the computer is off, press the button briefly to turn on the computer. - When the computer is on, press the button briefly to initiate Sleep. - When the computer is in the Sleep state, press the button briefly to exit Sleep (select products only). - When the computer is in Hibernation, press the button briefly to exit Hibernation. IMPORTANT: Pressing and holding down the power button results in the loss of unsaved information. If the computer has stopped responding and shutdown procedures are ineffective, press and hold the power button for at least 10 seconds to turn off the computer.

Bottom

Use the illustration and table to identify the bottom component.



Table 2-6 Bottom component and description

Component	Description
Speakers (2)	Produce sound.

Labels

The labels affixed to the computer provide information that you might need when you troubleshoot system problems or travel internationally with the computer. Labels can be in paper form or imprinted on the product.

 **IMPORTANT:** Check the following locations for the labels described in this section: the bottom of the computer, inside the battery bay, under the service door, on the back of the display, or on the bottom of a tablet kickstand.

- **Service label**—Provides important information to identify your computer. When contacting support, you might be asked for the serial number, the product number, or the model number. Locate this information before you contact support.

Your service label information order may vary by country and might not include the wording "Model" due to the country regulation.

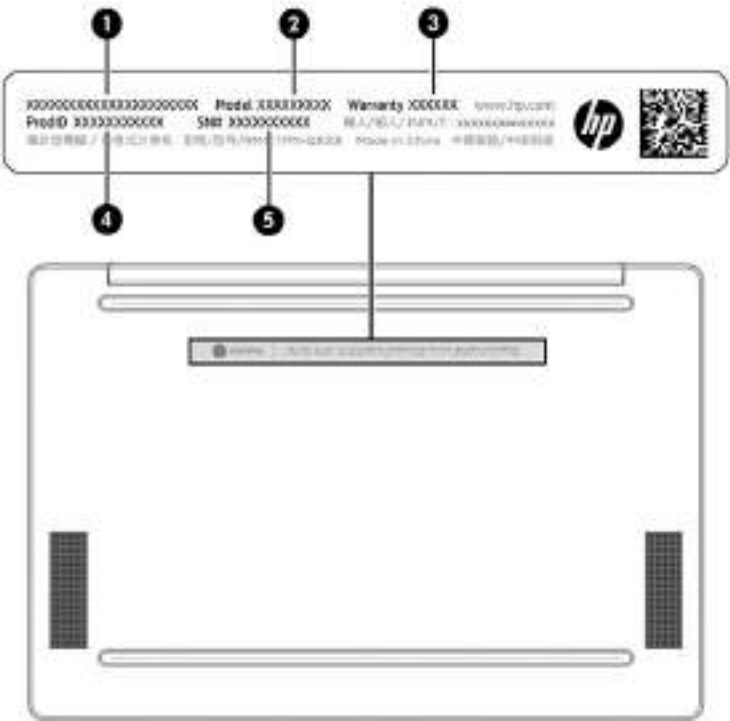


Table 2-7 Service label components

Component	
(1)	HP product name
(2)	Model number
(3)	Warranty period
(4)	Product ID
(5)	Serial number

- **Regulatory label(s)**—Provide(s) regulatory information about the computer.
- **Wireless certification label(s)**—Provide(s) information about optional wireless devices and the approval markings for the countries or regions in which the devices have been approved for use.

3 Illustrated parts catalog

Use this table to determine the spare parts that are available for the computer.

Computer major components

To identify the computer major components, use this illustration and table.

 **NOTE:** HP continually improves and changes product parts. For complete and current information about supported parts for your computer, go to <http://partsurfer.hp.com>, select your country or region, and then follow the on-screen instructions.

 **NOTE:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer.

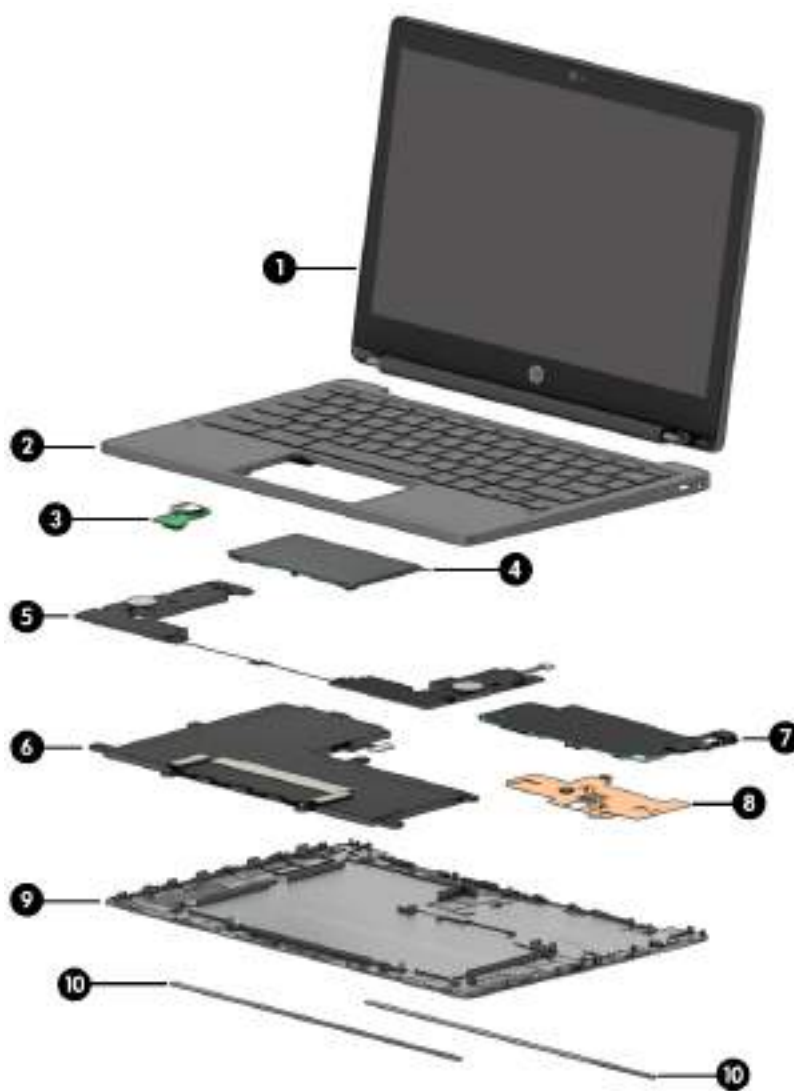


Table 3-1 Computer major component descriptions and part numbers

Item	Component	Spare part number
(1)	Display assembly NOTE: Display spare parts are available only as subcomponents. For spare part information, see Display assembly subcomponents on page 10 .	not available as a spare part
(2)	Top cover with keyboard NOTE: For a detailed list of country codes, see Keyboard with top cover on page 35 .	
	Ash gray top cover with keyboard	M15728-001
	Indigo blue top cover with keyboard	M15729-001
	Snow white top cover with keyboard	M15730-001
(3)	USB board NOTE: The USB board cable is available as spare part number M15711-001.	M15716-001
(4)	Touchpad NOTE: The touchpad cable is available as spare part number M15710-001. The touchpad bracket rubber is available as spare part number M16563-001.	
	Ash gray	M15713-001
	Indigo blue	M15714-001
	Snow white	M15715-001
(5)	Speaker Kit (includes left and right speakers)	M15724-001
(6)	Battery	L97355-005
(7)	System board (includes integrated processor, system memory, and eMMC memory)	
	4 GB system memory and 32 GB eMMC memory	M15725-001
	4 GB system memory and 64 GB eMMC memory	M15726-001
(8)	Heat sink	M15731-001
(9)	Bottom cover	
	Ash gray	M15701-001
	Indigo blue	M15702-001
	Snow white	M15703-001
(10)	Rubber Feet	
	Ash gray	M15720-001
	Indigo blue	M15721-001
	Snow white	M15722-001

Display assembly subcomponents

To identify the display assembly subcomponents, use this illustration and table.

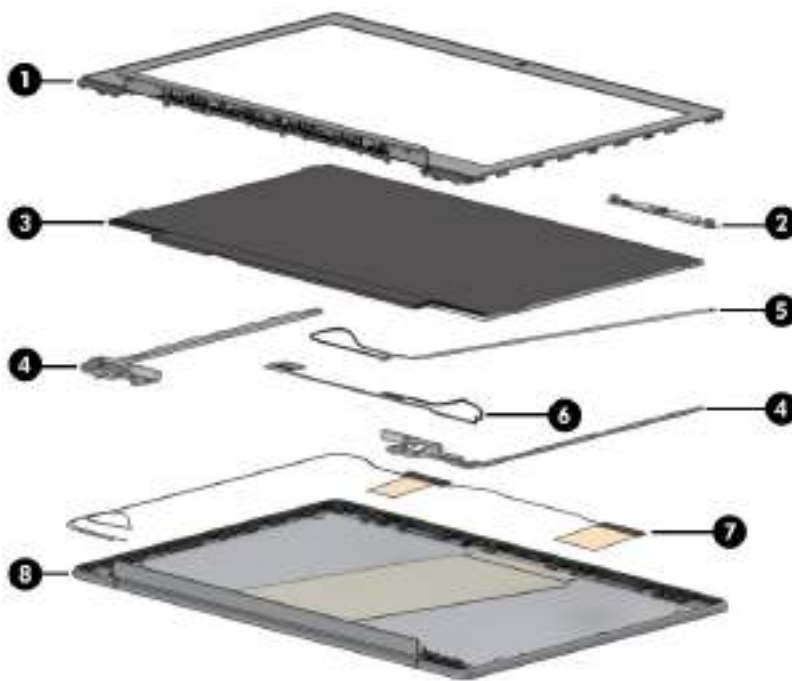


Table 3-2 Display component descriptions and part numbers

Item	Component	Spare part number
(1)	Display bezel	
	Ash gray	M15704-001
	Indigo blue	M15705-001
	Snow white	M15706-001
(2)	Camera module	M15727-001
(3)	Display panel	
	Nontouch	M15719-001
	Touch	M15718-001
(4)	Display hinges (right and left)	M15712-001
(5)	Camera cable	M15709-001
(6)	Display cable	
	Nontouch	M15708-001
	Touch	M15707-001
(7)	Antennas and cables	M15696-001
(8)	Display back cover (includes antennas)	
	Ash gray	M15697-001
	Indigo blue	M15698-001
	Indigo blue + snow white	M15699-001
	Snow white	M15700-001

Cables

To identify the cables, use this illustration and table.



Table 3-3 Cable descriptions and part numbers

Item	Component	Spare part number
(1)	Touchpad cable	M15710-001
(2)	Display/camera cable	
	Touch	M15707-001
	Nontouch	M15708-001
(3)	USB board cable	M15711-001
(4)	Camera cable	M15709-001

Miscellaneous parts

To identify the miscellaneous parts, use this table.

Table 3-4 Miscellaneous part descriptions and part numbers

Component	Spare part number
AC adapter (45 W, nPFC, USB Type-C, 1.8 m, 3 pin)	L43407-001
Screw Kit	M15723-001
Power cords (C5, 1.0 m)	
Denmark	L19360-001
Europe	L19361-001
India	L19363-001
North America	L19367-001
United Kingdom	L19373-001

4 Removal and replacement procedures preliminary requirements

Use this information to properly prepare to disassemble and reassemble the computer.

Tools required

You need the following tools to complete the removal and replacement procedures:

- Nonconductive, nonmarking pry tool
- Magnetic Phillips P1 screwdriver

Service considerations

The following sections include some of the considerations that you must keep in mind during disassembly and assembly procedures.

 **NOTE:** As you remove each subassembly from the computer, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

Plastic parts

Using excessive force during disassembly and reassembly can damage plastic parts.

Cables and connectors

Handle cables with extreme care to avoid damage.

 **IMPORTANT:** When servicing the computer, be sure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the computer.

Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. Be sure that cables are routed so that they cannot be caught or snagged as you remove or replace parts. Handle flex cables with extreme care; these cables tear easily.

Drive handling

Note the following guidelines when handling drives.



IMPORTANT: Drives are fragile components. Handle them with care. To prevent damage to the computer, damage to a drive, or loss of information, observe these precautions:

Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.

Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

Before removing an optical drive, be sure that a disc is not in the drive, and be sure that the optical drive tray is closed.

Handle drives on surfaces covered with at least 2.54 cm (1 inch) of shock-proof foam.

Avoid dropping drives from any height onto any surface.

After removing a hard drive or an optical drive, place it in a static-proof bag.

Avoid exposing an internal hard drive to products that have magnetic fields, such as monitors or speakers.

Avoid exposing a drive to temperature extremes or liquids.

If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging, and label the package “FRAGILE.”

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screw drivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and polystyrene foam.
- Handle ESD-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

Electrostatic discharge information

A sudden discharge of static electricity from your finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) might not appear to be affected at all and can work perfectly throughout a normal cycle. The device might function normally for a while, but it has been degraded in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.



IMPORTANT: To prevent damage to the device when you remove or install internal components, observe these precautions:

Keep components in their electrostatic-safe containers until you are ready to install them.

Before touching an electronic component, discharge static electricity by using the guidelines described [Personal grounding methods and equipment on page 16](#).

Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.

If you remove a component, place it in an electrostatic-safe container.

Generating static electricity

Follow these static electricity guidelines.

- Different activities generate different amounts of static electricity.
- Static electricity increases as humidity decreases.

Table 4-1 Static electricity occurrence based on activity and humidity

Event	Relative humidity		
	55%	40%	10%
Walking across carpet	7,500 V	15,000 V	35,000 V
Walking across vinyl floor	3,000 V	5,000 V	12,000 V
Motions of bench worker	400 V	800 V	6,000 V
Removing DIPs (dual in-line packages) from plastic tube	400 V	700 V	2,000 V
Removing DIPs from vinyl tray	2,000 V	4,000 V	11,500 V
Removing DIPs from polystyrene foam	3,500 V	5,000 V	14,500 V
Removing bubble pack from PCB (printed circuit board)	7,000 V	20,000 V	26,500 V
Packing PCBs in foam-lined box	5,000 V	11,000 V	21,000 V
Multiple electric components can be packaged together in plastic tubes, trays, or polystyrene foam.			



NOTE: As little as 700 V can degrade a product.

Preventing electrostatic damage to equipment

Many electronic components are sensitive to ESD. Circuitry design and structure determine the degree of sensitivity. The following packaging and grounding precautions are necessary to prevent static electricity damage to electronic components.

- To avoid hand contact, transport products in static-safe containers such as tubes, bags, or boxes.
- Protect all electrostatic parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free stations.
- Place items on a grounded surface before removing them from their container.
- Always be properly grounded when touching a sensitive component or assembly.

- Avoid contact with pins, leads, or circuitry.
- Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Personal grounding methods and equipment

Using certain equipment can prevent static electricity damage to electronic components.

- **Wrist straps** are flexible straps with a maximum of $1\text{ M}\Omega \pm 10\%$ resistance in the ground cords. To provide proper ground, a strap must be worn snug against bare skin. The ground cord must be connected and fit snugly into the banana plug connector on the grounding mat or workstation.
- **Heel straps/Toe straps/Boot straps** can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use them on both feet with a maximum of $1\text{ M}\Omega \pm 10\%$ resistance between the operator and ground.

Table 4-2 Static shielding protection levels

Static shielding protection levels	
Method	Voltage
Antistatic plastic	1,500
Carbon-loaded plastic	7,500
Metallized laminate	15,000

Grounding the work area

To prevent static damage at the work area, follow these precautions.

- Cover the work surface with approved static-dissipative material. Provide a wrist strap connected to the work surface and properly grounded tools and equipment.
- Use static-dissipative mats, foot straps, or air ionizers to give added protection.
- Handle electrostatic sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free work areas.
- Turn off power and input signals before inserting and removing connectors or test equipment.
- Use fixtures made of static-safe materials when fixtures must directly contact dissipative surfaces.
- Keep work area free of nonconductive materials such as ordinary plastic assembly aids and polystyrene foam.
- Use field service tools, such as cutters, screwdrivers, and vacuums, that are conductive.

Recommended materials and equipment

HP recommends certain materials and equipment to prevent static electricity.

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins and other assembly or soldering aids
- Conductive foam
- Conductive tabletop workstations with ground cord of $1\text{ M}\Omega \pm 10\%$ resistance

- Static-dissipative table or floor mats with hard tie to ground
- Field service kits
- Static awareness labels
- Wrist straps and footwear straps providing $1\text{ M}\Omega \pm 10\%$ resistance
- Material handling packages
- Conductive plastic bags
- Conductive plastic tubes
- Conductive tote boxes
- Opaque shielding bags
- Transparent metallized shielding bags
- Transparent shielding tubes

Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment.

- To avoid hand contact, transport products in static-safe tubes, bags, or boxes.
- Protect ESD-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep ESD-sensitive parts in their containers until the parts arrive at static-free workstations.
- Place items on a grounded surface before removing items from their containers.
- Always be properly grounded when touching a component or assembly.
- Store reusable ESD-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Be sure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

5 Removal and replacement procedures for authorized service provider parts

This chapter provides removal and replacement procedures for authorized service provider parts.

 **IMPORTANT:** Components described in this chapter should be accessed only by an authorized service provider. Accessing these parts can damage the computer or void the warranty.

 **NOTE:** Details about your computer, including model, serial number, product key, and length of warranty, are on the service tag at the bottom of your computer.

Component replacement procedures

To remove and replace computer components, use these procedures.

 **NOTE:** HP continually improves and changes product parts. For complete and current information about supported parts for your computer, go to <http://partsurfer.hp.com>, select your country or region, and then follow the on-screen instructions.

You must remove, replace, or loosen as many as 45 screws when you service the parts described in this chapter. Make special note of each screw size and location during removal and replacement.

Preparation for disassembly

To remove and replace computer components, use these procedures.

See [Removal and replacement procedures preliminary requirements on page 13](#) for initial safety procedures.

1. Turn off the computer. If you are unsure whether the computer is off or in Sleep, turn the computer on, and then shut it down through the operating system.
2. Disconnect the power from the computer by unplugging the power cord from the computer.
3. Disconnect all external devices from the computer.

Bottom cover

To remove the bottom cover, use this procedure and illustration.

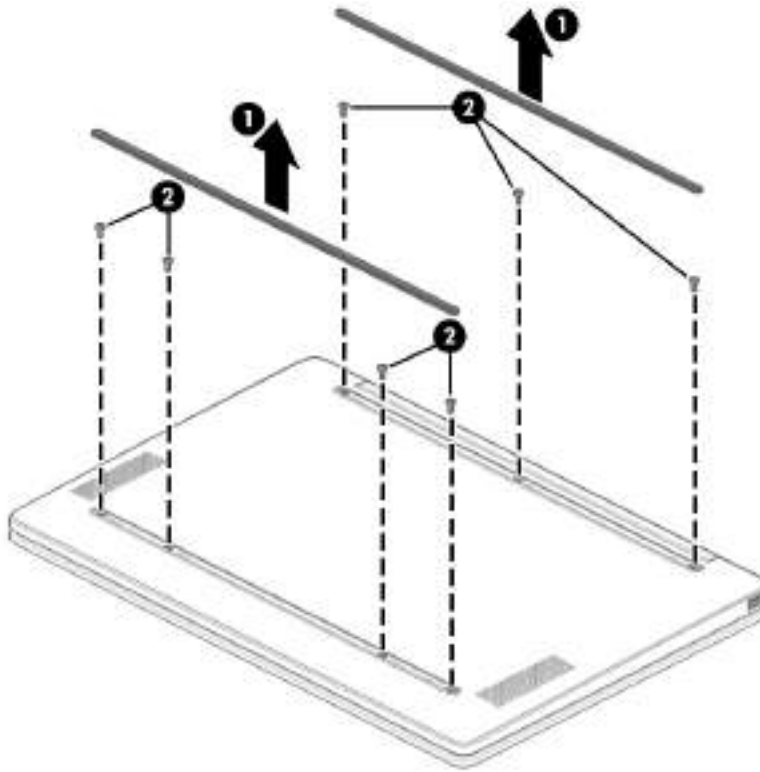
Table 5-1 Bottom cover description and part number

Description	Spare part number
Bottom cover, ash gray	M15701-001
Bottom cover, indigo blue	M15702-001
Bottom cover, snow white	M15703-001
Rubber feet, ash gray	M15720-001
Rubber feet, indigo blue	M15721-001
Rubber feet, snow white	M15722-001

Before removing the bottom cover, prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).

Remove the bottom cover:

1. Peel the two rubber feet off the bottom of the computer **(1)**.
2. Remove the seven Phillips M2.5 × 5.0 screws **(2)** that secure the bottom cover to the computer.



3. Starting between the hinges, release the edges of the bottom cover from the computer **(1)**.
4. Remove the bottom from the computer **(2)**.



To replace the bottom cover, reverse the removal procedures.

Battery

To remove the battery, use this procedure and illustration.

Table 5-2 Battery description and part number

Description	Spare part number
Battery	L97355-005

 **WARNING!** To avoid personal injury and damage to the product:

- Do *not* puncture, twist, or crack the battery.
- Do *not* cause an external puncture or rupture to the battery. They can cause a short inside the battery, which can result in battery thermal runaway.
- Do *not* handle or touch the battery enclosure with sharp objects such as tweezers or pliers, which might puncture the battery.
- Do *not* compress or squeeze the battery case with tools or heavy objects stacked on top of the case. These actions can apply undue force on the battery.
- Do *not* touch the connectors with any metallic surface or object, such as metal tools, screws, or coins, which can cause shorting across the connectors.

Before removing the battery, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).
2. Remove the bottom cover ([Bottom cover on page 18](#)).

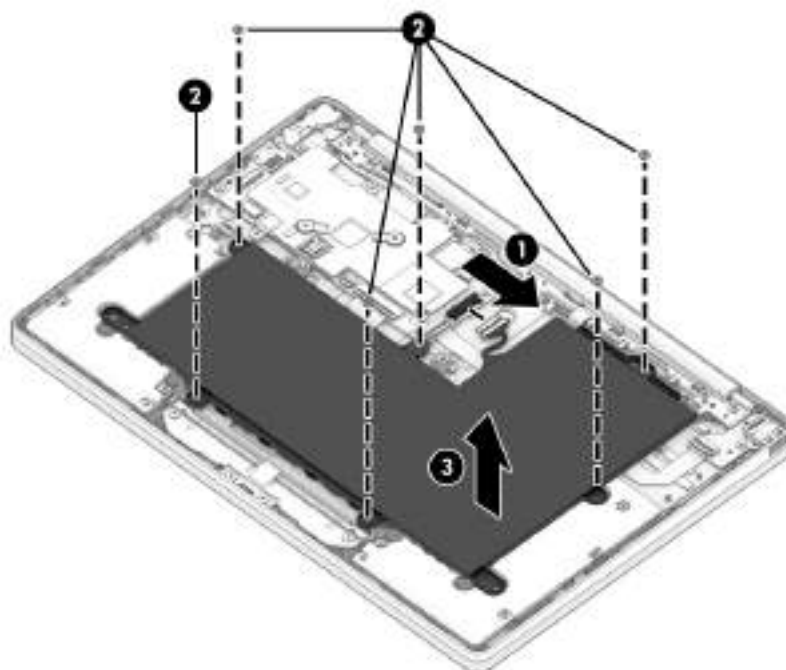
 **WARNING!** To reduce potential safety issues, use only the user-replaceable battery provided with the computer, a replacement battery provided by HP, or a compatible battery purchased from HP.

 **IMPORTANT:** Removing a battery that is the sole power source for the computer can cause loss of information. To prevent loss of information, save your work or shut down the computer before you remove the battery.

Remove the battery:

1. Disconnect the battery cable from the system board **(1)**.
2. Remove the six Phillips M2.0 × 2.5 screws **(2)** that secure the battery to the computer.

3. Remove the battery from the computer **(3)**.



To install the battery, reverse the removal procedures.

Touchpad

To remove the touchpad, use this procedure and illustration.

Table 5-3 Touchpad description and part number

Description	Spare part number
Touchpad, ash gray	M15713-001
Touchpad, indigo blue	M15714-001
Touchpad, snow white	M15715-001
Touchpad cable	M15710-001
Touchpad bracket rubber	M16563-001

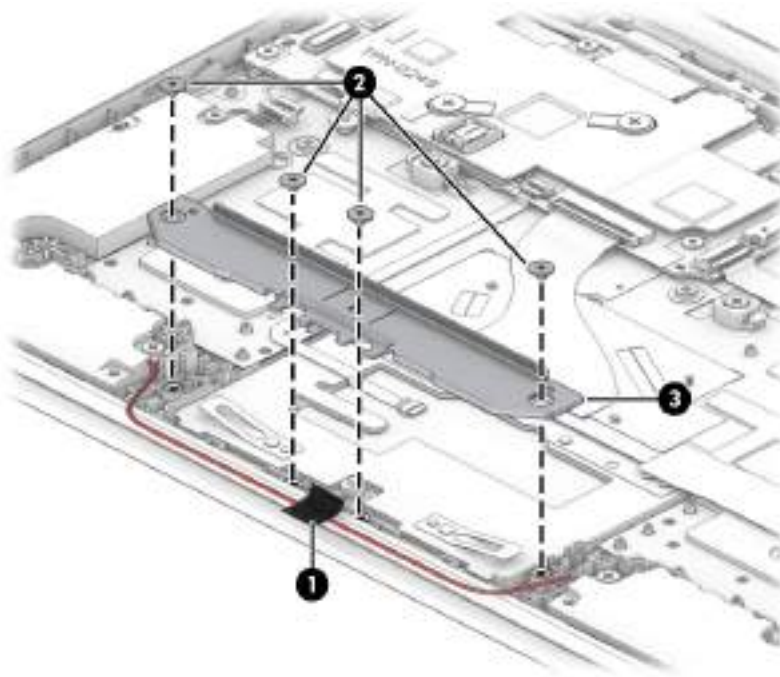
Before removing the touchpad, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).
2. Remove the bottom cover ([Bottom cover on page 18](#)).
3. Remove the battery ([Battery on page 20](#)).

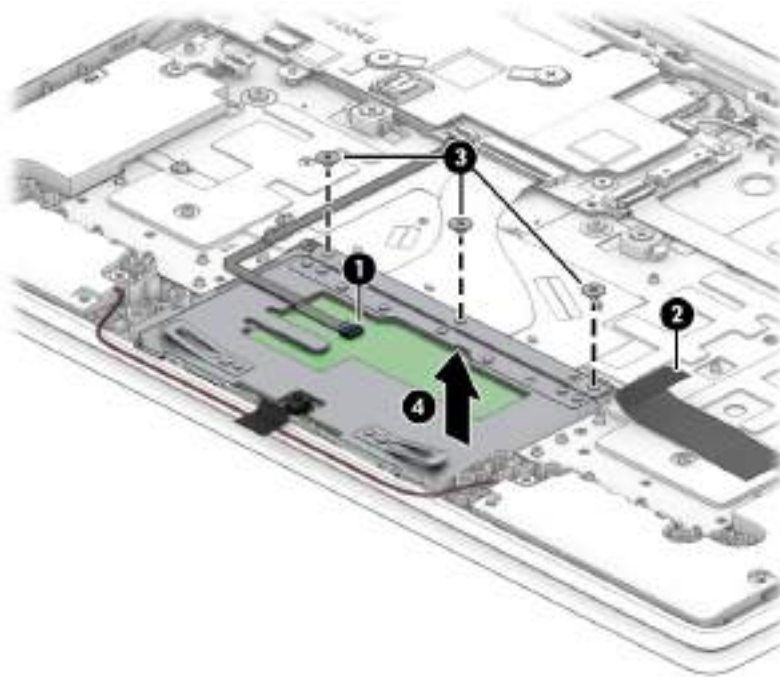
Remove the touchpad:

1. Remove the speaker cable that is taped to the touchpad bracket **(1)**.
2. Remove the four Phillips M2.0 × 2.0 screws **(2)** that secure the touchpad bracket to the computer.

3. Remove the touchpad bracket (3).



4. Disconnect the cable from the ZIF connector on the touchpad (1).
5. Remove the protective tape that covers the screw on the corner of the touchpad (2).
6. Remove the three Phillips M2.0 × 2.0 screws (3) that secure the touchpad to the computer.
7. Remove the touchpad (4) from the computer.



Reverse this procedure to install the touchpad.

Speakers

To remove the speakers, use this procedure and illustration.

Table 5-4 Speaker description and part number

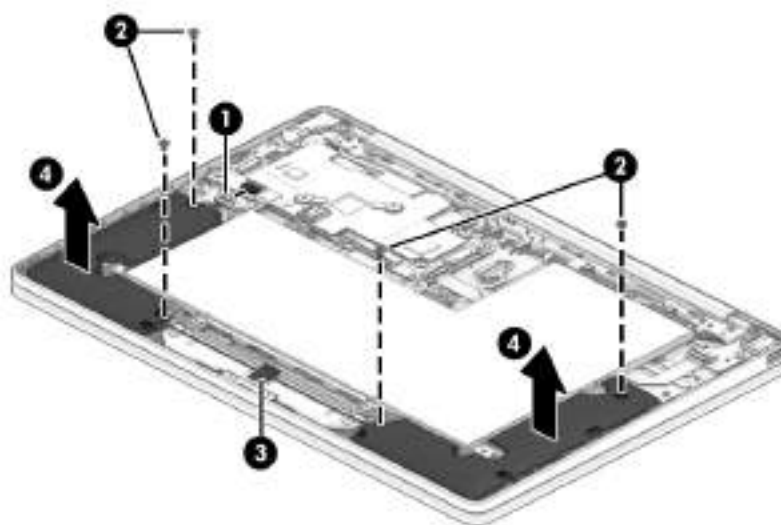
Description	Spare part number
Speaker Kit	M15724-001

Before removing the speakers, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).
2. Remove the bottom cover ([Bottom cover on page 18](#)).
3. Disconnect the battery cable from the system board ([Battery on page 20](#)).

Remove the speakers:

1. Disconnect the speaker cable **(1)** from the system board.
2. Remove the four Phillips M2.0 × 4.0 screws **(2)** that secure the speakers to the bottom cover.
3. Remove the tape from the wire between the speakers **(3)**.
4. Remove the speakers from the computer **(4)**.



Reverse this procedure to install the speakers.

USB board

To remove the USB board, use this procedure and illustration.

Table 5-5 USB board description and part number

Description	Spare part number
USB board	M15716-001

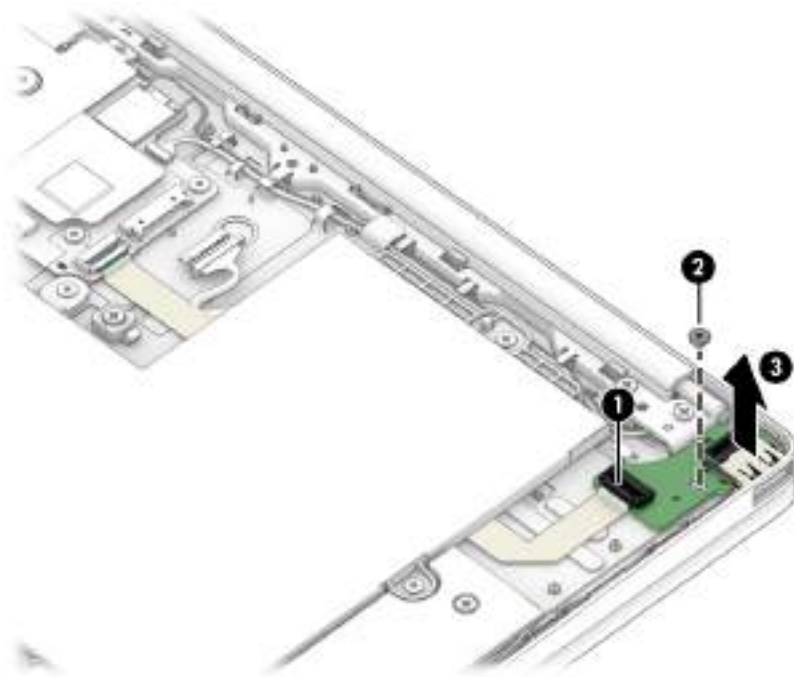
NOTE: The USB board cable is available as spare part number M15711-001.

Before removing the USB board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).
2. Remove the bottom cover ([Bottom cover on page 18](#)).
3. Disconnect the battery cable from the system board ([Battery on page 20](#)).

Remove the USB board:

1. Disconnect the cables from the ZIF connector on the USB board **(1)**.
2. Remove the Phillips M2.0 × 2.0 screw **(2)** that secures the USB board to the computer.
3. Remove the USB board **(3)**.



Reverse this procedure to install the USB board.

Heat sink

To remove the heat sink, use these procedures and illustrations.

Table 5-6 Heat sink description

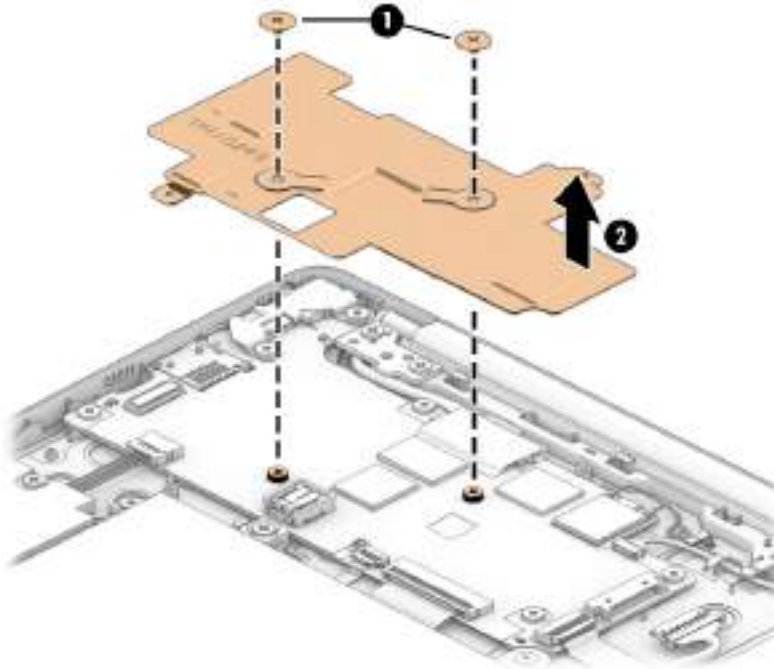
Description	Spare part number
Heat sink	M15731-001

Before removing the heat sink, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).
2. Remove the bottom cover ([Bottom cover on page 18](#)).
3. Disconnect the battery cable from the system board ([Battery on page 20](#)).

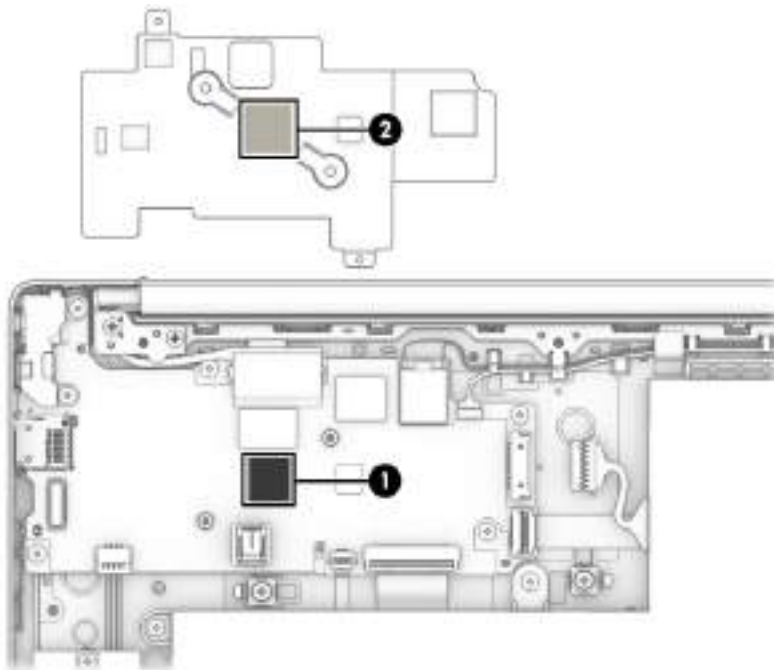
Remove the heat sink:

1. Remove the two Phillips M2.0 × 3.0 screws **(1)** that secure the heat sink to the system board.
2. Remove heat sink **(2)**.



3. Thoroughly clean the thermal material from the surfaces of the heat sink and the system board components each time the heat sink is removed.

Thermal paste is used on the system board **(1)** and on the heat sink component that services it **(2)**.



Reverse this procedure to install the heat sink.

System board

To remove the system board, use these procedures and illustrations.

Table 5-7 System board descriptions and part numbers

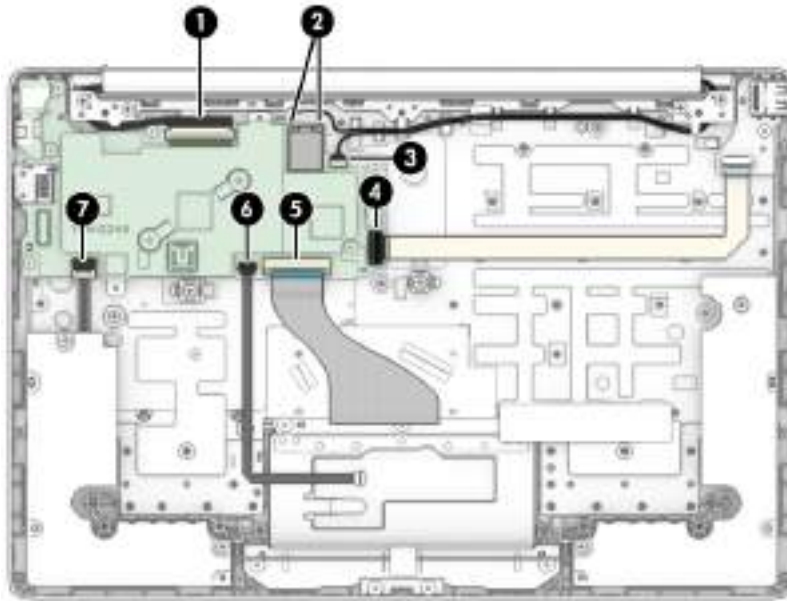
Description	Spare part number
System board (includes integrated Mediatek MT8183 processor, 4 GB of system memory, and eMMC memory)	
32 GB eMMC memory	M15725-001
64 GB eMMC memory	M15726-001

Before removing the system board, follow these steps:

1. Prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).
2. Remove the bottom cover ([Bottom cover on page 18](#)).
3. Disconnect the battery cable from the system board ([Battery on page 20](#)).

Remove the system board:

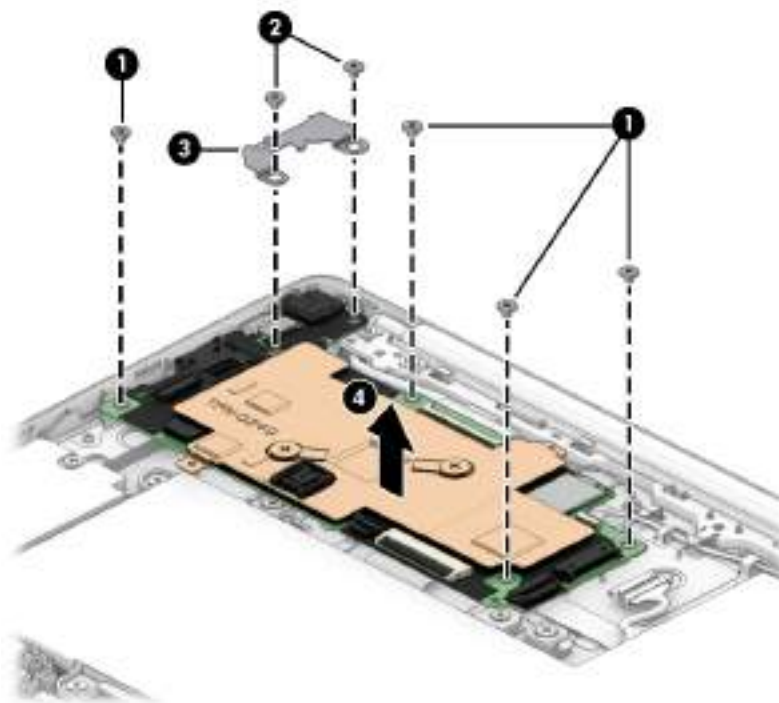
1. Disconnect the following cables from the system board:
 - Display cable **(1)**
 - Antenna cables from the WLAN module **(2)**
 - Camera cable **(3)**
 - USB board cable (ZIF) **(4)**
 - Keyboard cable (ZIF) **(5)**
 - Touchpad cable (ZIF) **(6)**
 - Speaker cable (ZIF) **(7)**



2. Remove the four Phillips M2.0 × 2.0 screws **(1)** that secure the system board to the computer.
3. Remove the two Phillips M2.0 × 2.0 screws **(2)** that secure the USB bracket to the system board.
4. Remove the USB bracket from the system board **(3)**.
5. Remove the system board **(4)** from the computer.



IMPORTANT: When replacing the system board, be sure to remove the heat sink from the defective system board and install it on the replacement system board.



Reverse this procedure to install the system board.

Display assembly

To remove and disassemble the display assembly, use these procedures and illustrations.

 **NOTE:** Full hinge-up displays are not available as spare parts. Spare parts for displays are available only at the subcomponent level.

Before removing the display panel, follow these steps:

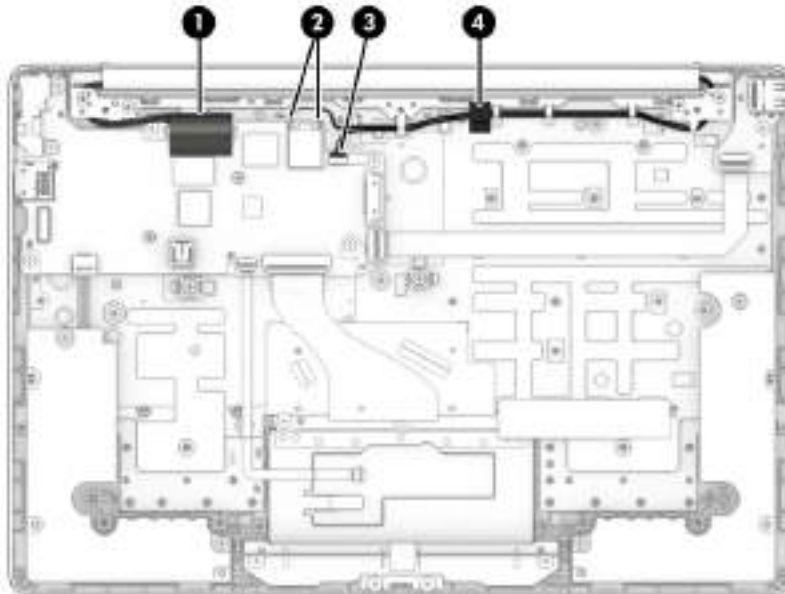
1. Prepare the computer for disassembly ([Preparation for disassembly on page 18](#)).
2. Remove the bottom cover ([Bottom cover on page 18](#)).
3. Disconnect the battery cable from the system board ([Battery on page 20](#)).

Remove the display assembly:

1. Disconnect the display cable **(1)** from the system board.
2. Disconnect the WLAN antenna cables **(2)** from the terminals on the WLAN module.

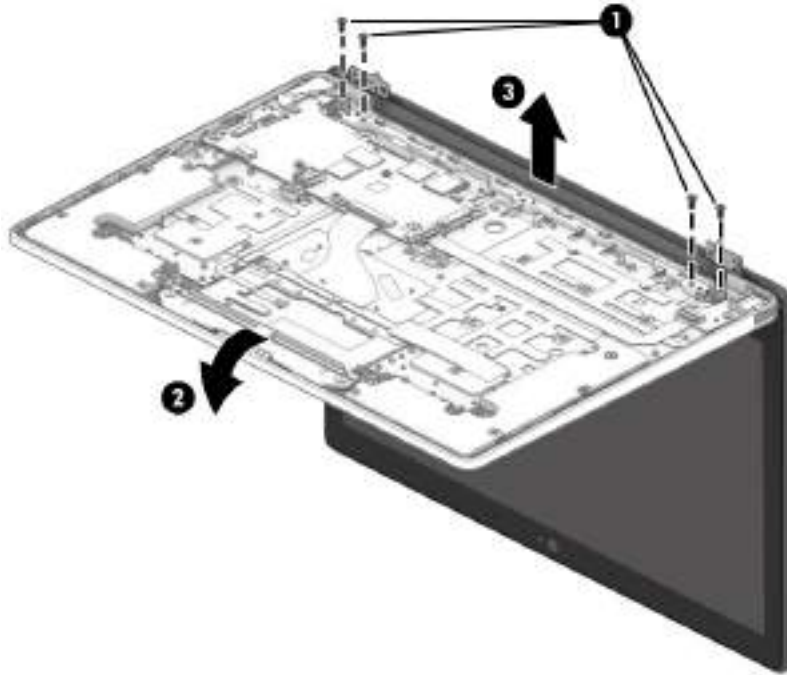
 **NOTE:** The WLAN antenna cable labeled 1/MAIN connects to the WLAN module Main terminal. The WLAN antenna cable labeled 2/AUX connects to the WLAN module Aux terminal.

3. Disconnect the camera cable **(3)** from the system board.
4. Release the tape **(4)** that secures the camera cable and antenna cables to the computer, and then remove the cables from the retention clips.



5. Remove the four Phillips M2.5 × 5.0 screws **(1)** that secure the display to the computer.

6. Open the computer **(2)**, and then separate the display from the computer **(3)**.



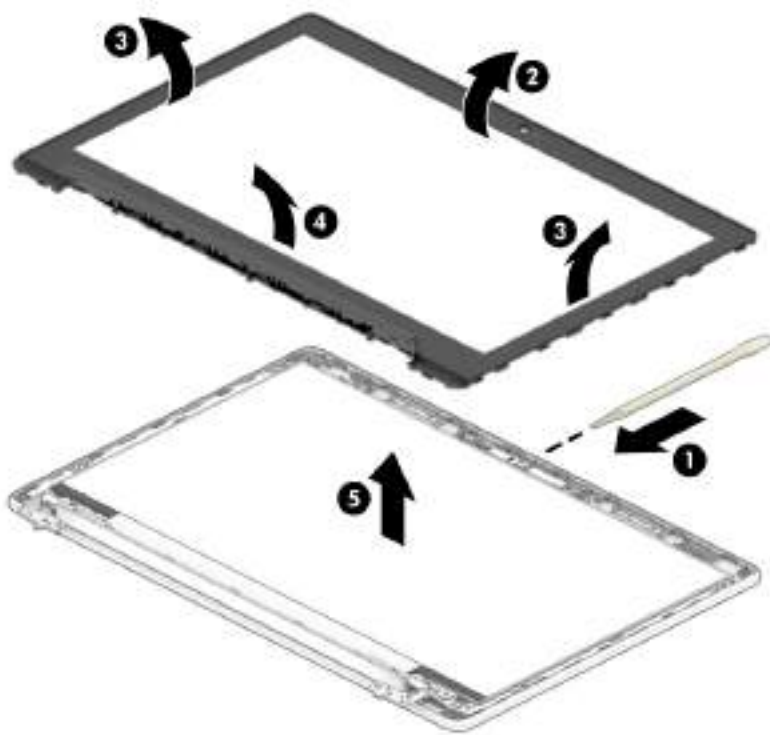
7. If you need to replace display assembly subcomponents:
- a. Use a flat, nonmarking tool **(1)** to release the top edge **(2)** of the display bezel from the display assembly.
 - b. Release the left and right edges **(3)** of the display bezel from the display assembly.
 - c. Release the bottom edge **(4)** of the display bezel from the display assembly.
 - d. Remove the display bezel **(5)**.

The bezels are available as spare part numbers:

M15704-001: Ash grey

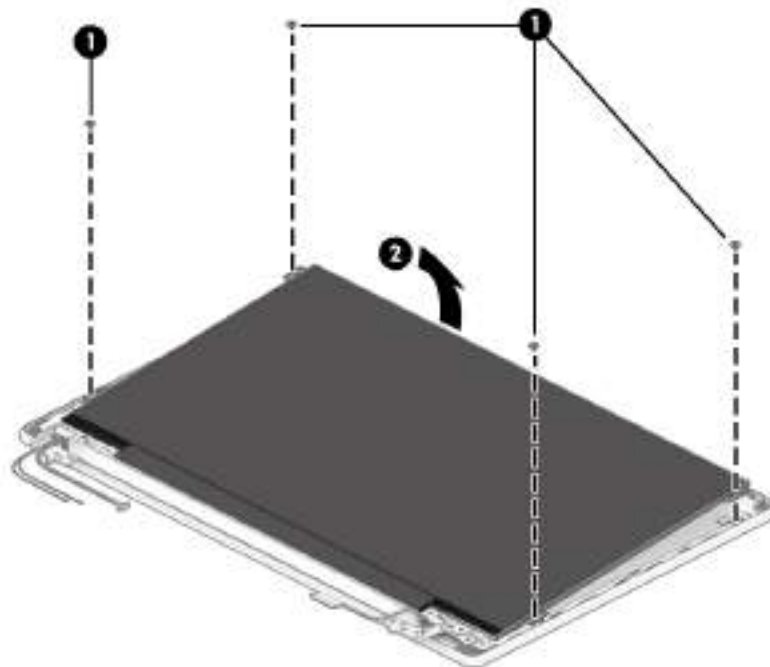
M15705-001: Indigo blue

M15706-001: Snow white



8. If you need to remove the display panel:

- a.** Remove the four Phillips M2.0 × 3.0 screws **(1)** that secure the display panel to the display rear cover.
- b.** Lift the top edge of the display panel and swing it up and forward until it rests upside down next to the display rear cover **(2)**.



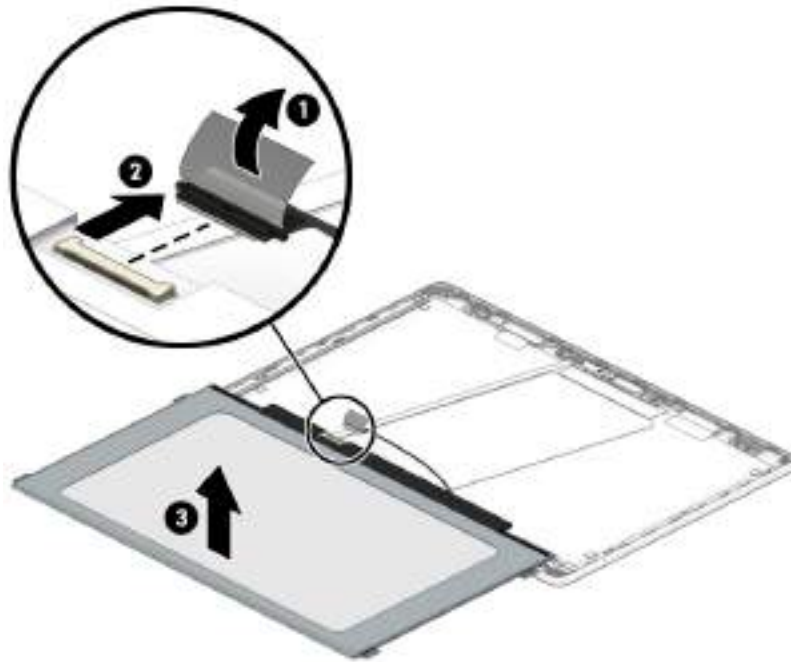
- c.** Release the adhesive support strip **(1)** that secures the display panel cable to the display panel.

- d. Disconnect the display panel cable **(2)** from the display panel.
- e. Remove the display panel **(3)**.

Display panels are available as the following spare part numbers:

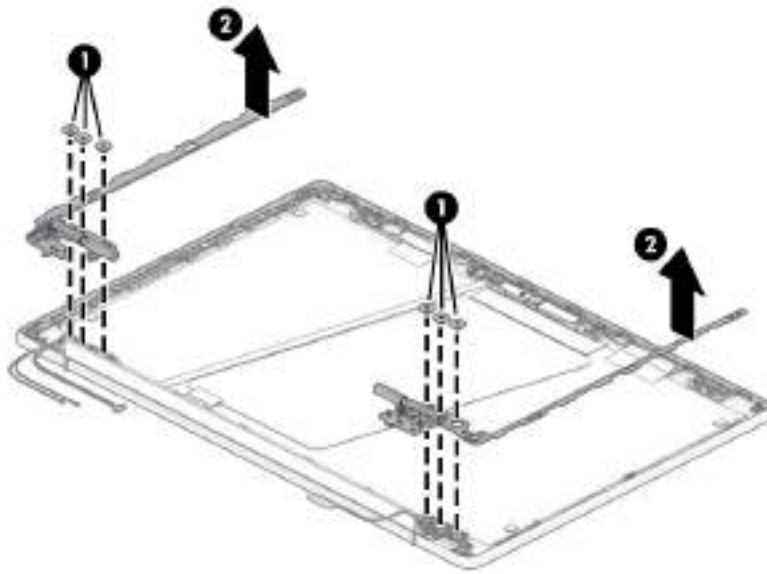
M15719-001: Nontouch panel

M15718-001: Touch panel

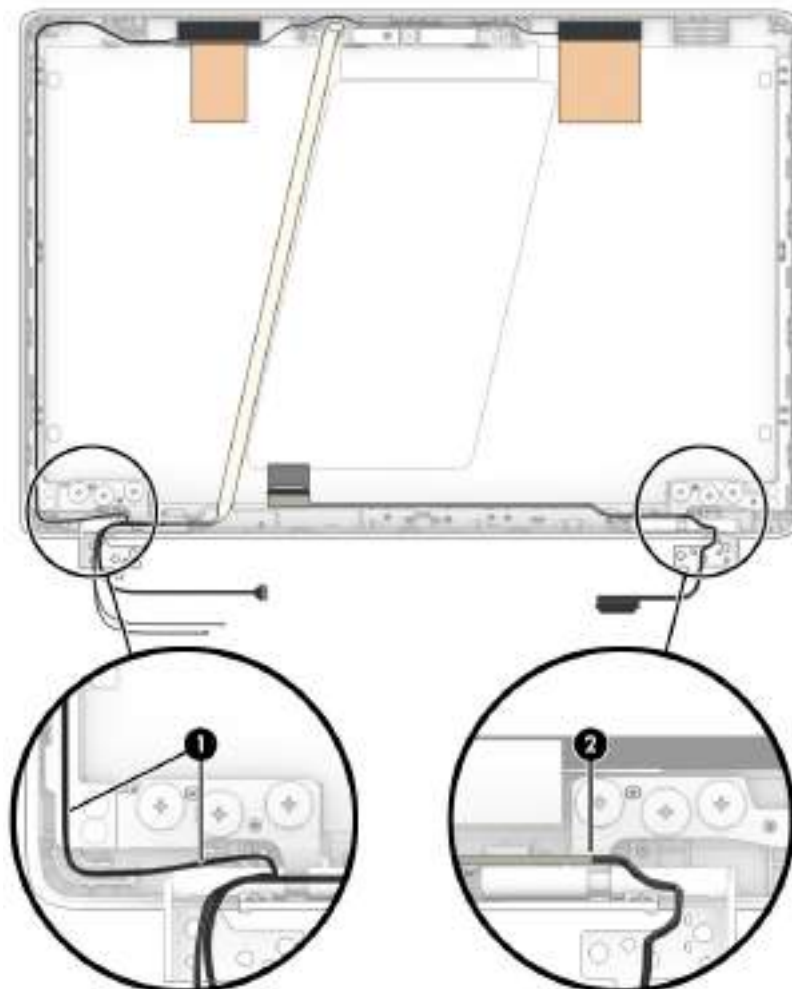


- 9. If you need to remove the hinges from the display rear cover:
 - a. Remove the six Phillips M2.6 × 2.8 screws **(1)** that secure the hinges to the display rear cover.
 - b. Remove the display hinges **(2)**.

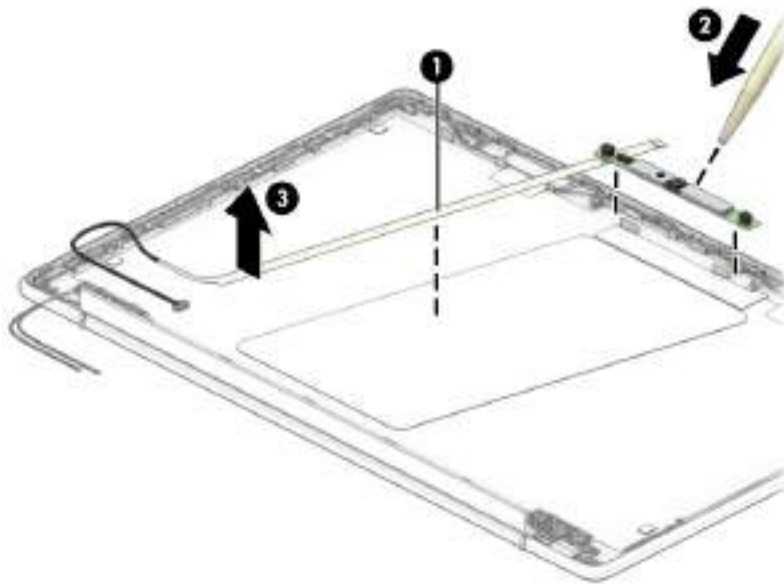
The display hinges are available as spare part number M15712-001.



10. Use the following illustration to determine proper cable routing around the left **(1)** and right **(2)** hinges of the display.



- 11.** If you need to remove the camera module:
- Release the camera cable from the adhesive that secures it to the inside of the display rear cover **(1)**.
 - Use a tool to release the camera module from the display rear cover **(2)**, and then disconnect the cable from the camera module.
 - Remove the cable from the display rear cover **(3)**. The camera module is available as spare part number M15727-001. The camera cable is available as spare part number M15709-001.

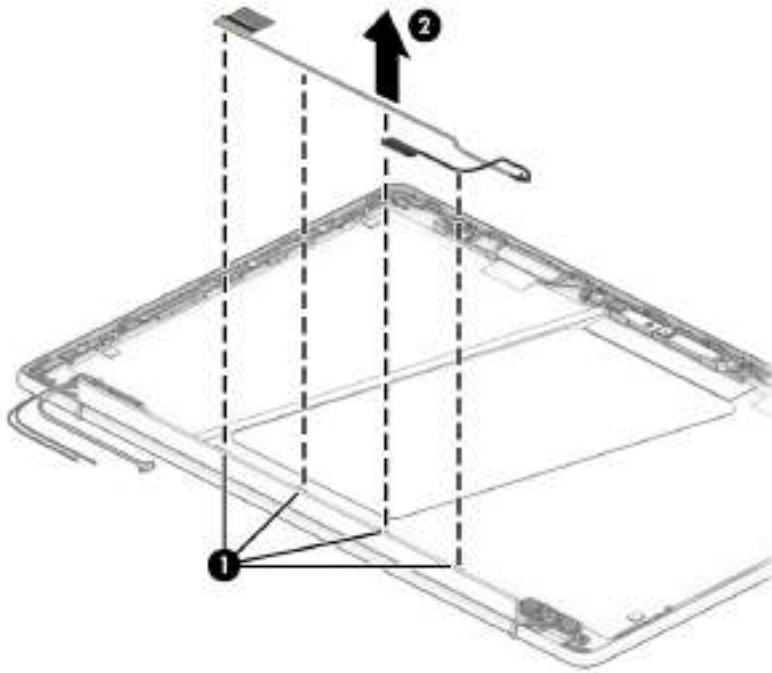


- 12.** If you need to remove the display cable, remove the cable from the clips along the bottom of the display rear cover **(1)**, and then remove the cable **(2)**.

Display cables are available as the following spare part numbers:

M15707-001: Touch panel

M15708-001: Nontouch panel



- 13.** If you need to remove the antennas from the display rear cover:
- a.** Remove the antenna cables from the clips along the left side of the display rear cover **(1)**.
 - b.** Peel the antennas from the cover **(2)**, and then remove the antennas and cables **(3)**.

The antennas are available as spare part number M15696-001.

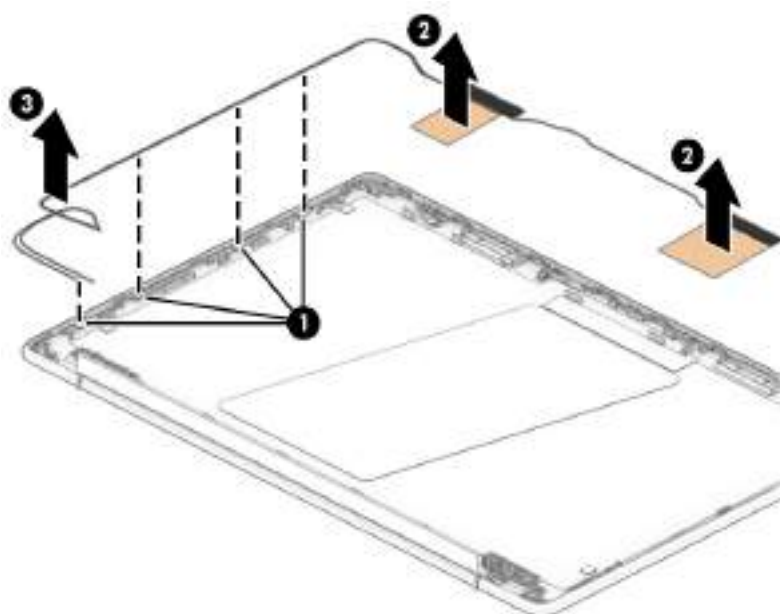
Display rear covers are available as the following spare part numbers:

M15697-001: Ash grey

M15698-001: Indigo blue

M15699-001: Indigo blue + snow white

M15700-001: Snow white



Reverse this procedure to reassemble and replace the display assembly.

Keyboard with top cover

The top cover with keyboard remains after removing all other spare parts from the computer. In this section, the first table provides the main spare part number for the top cover/keyboards. The second table provides the country codes.

Table 5-8 Keyboard with top cover descriptions and part numbers

Description	Spare part number
Ash grey top cover with keyboard	M15728-001
Indigo blue top cover with keyboard	M15729-001
Snow white top cover with keyboard	M15730-001

Table 5-9 Spare part country codes

For use in country or region	Spare part number	For use in country or region	Spare part number	For use in country or region	Spare part number
Belgium	-A41	Germany	-041	Spain	-071
Denmark, Finland, and Norway	-DH1	Italy	-061	United Kingdom	-031
French Canada	-DB1	International	-B31	United States	-001
France	-051	Russia	-251		

6 Backing up, resetting, and recovering

This chapter provides information on the standard procedures of backing up your personal data, resetting your computer to original factory conditions, and recovering your operating system with the Chromebook Recovery Utility.

Backing up

You can back up your data to an optional USB flash drive or SD memory card or through Google Drive™.

For detailed information about creating a backup, go to <http://www.support.google.com>

Resetting

A factory reset erases the information on your computer hard drive, including files in the Downloads folder. Before you reset, back up your files to an optional USB flash drive, to an SD memory card, or through Google Drive. The factory reset will not delete your files at these locations.

You might want to reset your computer in the following circumstances:

- You see the message "Reset this Chrome device."
- You are having problems with your user profile or settings.
- You restarted your computer, and it still doesn't work properly.
- You want to change the owner of your computer.

To reset your computer:

1. Under the **Settings** menu, select **Advanced**.
2. In the **Powerwash** section, select **Powerwash**.
3. Select **Restart**.
4. In the window that appears, select **Powerwash**, and then select **Continue**.
5. Follow the on-screen instructions to reset your computer, and sign in with your Google Account.



NOTE: The account you sign in with after you reset your computer is recognized as the owner account.

6. After you complete the reset, you can set up your computer and check to see whether the problem is fixed.

Recovering

When your Chrome OS™ doesn't work properly, you can perform a recovery. A recovery reinstalls the operating system, software programs, and original factory settings. It deletes locally saved files and saved networks for all accounts. A system recovery does not affect Google Accounts and data synced to Google Drive.



IMPORTANT: Recovery permanently erases everything on your computer hard drive, including your downloaded files. If possible, back up your files before you recover your computer.

 **NOTE:** For more information about performing a system recovery on your computer, go to <http://www.support.google.com>.

Before you begin the recovery process, you need the following prerequisites:

- A USB flash drive or SD memory card with a capacity of 4 GB or greater. All data is erased from this storage device when the recovery media is created, so back up all files from the device before you begin.
- A computer with internet access. You must also have administrative rights to the computer.
- Computer AC adapter. The computer must be plugged into AC power during recovery.
- The “Chrome OS is missing or damaged” screen displaying on your computer. If this message is not already displayed:
 - Turn on the computer, press and hold the **esc+f3** keys, and then press the power button. The computer restarts, and the screen shows the “Chrome OS is missing or damaged” screen.

Installing the Chromebook Recovery Utility

The Chromebook™ Recovery Utility recovers the original operating system and software programs that were installed at the factory. You can install this utility from the Chrome Web Store on any computer.

To install the Chromebook Recovery Utility:

- ▲ Open the Chrome Web Store, search for `chrome recovery`, select **Chromebook Recovery Utility** from the Apps list, and follow the on-screen instructions.

Creating recovery media

You can use recovery media to recover the original operating system and software programs that were installed at the factory.

To create recovery media:

1. Turn on a computer that has internet access.
-
2. Select the **Launcher** icon, and then select **All Apps**.
 3. In the Apps window, select **Recovery**, and then select **Get started**.
 4. Follow the on-screen instructions to create the recovery media.
-

 **NOTE:** All data and partitions on your recovery media will be deleted. Do not remove the USB flash drive or SD memory card until the process is complete.

Recovering the Chrome operating system

Use these instructions to recover the Chrome operating system on your computer using the recovery media that you created.

1. Disconnect any external devices connected to your computer, plug in the power cord, and then turn on the computer.
2. To enter recovery mode, press and hold **esc+f3**, and then press the power button. When the “Chrome OS is missing or damaged” screen appears, insert the recovery media into your computer. The recovery process begins immediately.
3. Wait while Chrome verifies the integrity of the recovery media.



NOTE: If you need to cancel the recovery during the verification process, press and hold the power button until the computer turns off. Do not disrupt the system recovery process after the verification step is complete.



NOTE: If an error message is displayed, you might need to run the Chrome Recovery Utility again or use a different USB flash drive or SD memory card.

4. When the “System Recovery is complete” message appears, remove the recovery media.

The computer restarts with Chrome OS reinstalled.

Setting up your computer after a reset or recovery

After a reset or recovery is complete, perform the initial setup process.

For details about setting up the computer, go to <http://www.support.google.com>.

Erasing and reformatting the recovery media

When you create recovery media, the USB flash drive or SD memory card is formatted as a recovery tool. After recovery, you must erase the recovery media to reuse your storage device. Follow these steps to use the Chromebook Recovery Utility to erase the recovery media.

1. Select the **Launcher** icon, and then select **All Apps**.
2. In the apps window, select **Recovery**.
3. Select the **Settings** icon, and then select **Erase recovery media**.
4. Select the USB flash drive or SD memory card that you inserted, select **Continue**, and then select **Erase now**.
5. After the recovery media is erased, select **Done** to close the Chromebook Recovery Utility, and then remove the USB flash drive or SD memory card.

The media is ready to be formatted using a formatting tool provided by your operating system.

7 Specifications

This chapter provides specifications for your computer.

Computer specifications

This section provides specifications for your computer. When traveling with your computer, the computer dimensions and weights, as well as input power ratings and operating specifications, provide helpful information.

Table 7-1 Computer specifications

	Metric	U.S.
Dimensions		
Width	285.0 mm	11.2 in
Depth	192.8 mm	7.6 in
Height	16.8 mm	0.66 in
Weight	1059.7 g	2.3 lb
Input power		
Operating voltage and current	19.5 V dc @ 2.31 A – 45 W	
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	–20°C to 60°C	–4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	–15 m to 3,048 m	–50 ft to 10,000 ft
Nonoperating	–15 m to 12,192 m	–50 ft to 40,000 ft
NOTE: Applicable product safety standards specify thermal limits for plastic surfaces. The device operates well within this range of temperatures.		

29.5 cm (11.6 in) display specifications

This section provides specifications for your display.

Table 7-2 Display specifications

	Metric	U.S.
Active diagonal size	25.5 cm	11.6 in

Table 7-2 Display specifications (continued)

	Metric	U.S.
Resolution	1366 × 768 (HD)	
Surface treatment	Antiglare	
Brightness	220 nits	
Viewing angle	SVA (nontouch)	
	UWVA (touch)	
Backlight	WLED	
Display panel interface	eDP	

8 Power cord set requirements

This chapter provides power cord requirements for countries and regions.

The wide-range input feature of the computer permits it to operate from any line voltage from 100 V ac to 120 V ac, or from 220 V ac to 240 V ac.

The 3-conductor power cord set included with the computer meets the requirements for use in the country or region where the equipment is purchased.

Power cord sets for use in other countries or regions must meet the requirements of the country and region where the computer is used.

Requirements for all countries

These power cord requirements are applicable to all countries and regions.

- The length of the power cord set must be at least **1.0 m** (3.3 ft) and no more than **2.0 m** (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 A and a nominal voltage rating of 125 V ac or 250 V ac, as required by the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer.

Requirements for specific countries and regions

To determine power cord requirements for specific countries and regions, use this table.

Table 8-1 Power cord requirements for specific countries and regions

Country/region	Accredited agency	Applicable note number
Argentina	IRAM	1
Australia	SAA	1
Austria	OVE	1
Belgium	CEBEC	1
Brazil	ABNT	1
Canada	CSA	2
Chile	IMQ	1
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1

Table 8-1 Power cord requirements for specific countries and regions (continued)

Country/region	Accredited agency	Applicable note number
India	BIS	1
Israel	SII	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
New Zealand	SANZ	1
Norway	NEMKO	1
The People's Republic of China	CCC	4
Saudi Arabia	SASO	7
Singapore	PSB	1
South Africa	SABS	1
South Korea	KTL	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	6
Thailand	TISI	1
The United Kingdom	ASTA	1
The United States	UL	2

1. The flexible cord must be Type H05VV-F, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.
2. The flexible cord must be Type SVT/SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V ac) or NEMA 6-15P (15 A, 250 V ac) configuration. CSA or C-UL mark. UL file number must be on each element.
3. The appliance coupler, flexible cord, and wall plug must bear a T mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm² or 1.25 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V ac) configuration.
4. The flexible cord must be Type RVV, 3-conductor, 0.75 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the CCC certification mark.
5. The flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² conductor size. KTL logo and individual approval number must be on each element. Approval number and logo must be printed on a flag label.
6. The flexible cord must be Type HVCTF 3-conductor, 1.25 mm² conductor size. Power cord set fittings (appliance coupler, cable, and wall plug) must bear the BSMI certification mark.
7. For 127 V ac, the flexible cord must be Type SVT or SJT 3-conductor, 18 AWG, with plug NEMA 5-15P (15 A, 125 V ac), with UL and CSA or C-UL marks. For 240 V ac, the flexible cord must be Type H05VV-F 3-conductor, 0.75 mm² or 1.00 mm² conductor size, with plug BS 1363/A with BSI or ASTA marks.

9 Recycling

When a nonrechargeable or rechargeable battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for battery disposal.

HP encourages customers to recycle used electronic hardware, HP original print cartridges, and rechargeable batteries. For more information about recycling programs, see the HP website at <http://www.hp.com/recycle>.

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